CRATER-06 A
HEAVY DUTY 18” (450 mm) AUTOMATIC UPCUT MITER SAW
USER’S MANUAL

CONTENTS

1.GENERAL INFORMATION

1.1. INTRODUCTION

The user's manual given by the manufacturer contains necessary information about the machine parts. Each machine operator should read these instructions carefully, and the machine should be operated after fully understanding them.

Safe and efficient use of the machine for long term depends on understanding and following the instructions contained in this manual. The technical drawings and details contained in this manual constitute a guide for the operator.

1.2. DISTRIBUTOR

ATech Machine, Inc.

8539 Ziggy Lane – Gaithersburg, MD 20877 - USA

Phone: +1-240-505-1967 Fax: +1-301-560-6627

Website: www.ATechMachinery.com E-mail: info@ATechMachinery.com

In case of any technical problem please contact your nearest ATECH dealer, or ATECH head office through the above mentioned phone, fax or e-mail address.

Technical labels with the model description of the machine are fixed onto the front side of each machine.

The machine's serial number and manufacturing year are stipulated on the technical label

2. MACHINE'S DESCRIPTION AND PURPOSE OF USE

2.1. MACHINE'S DESCRIPTION

Automatic upcut saw with 18" (450 mm) circular saw blade for serial cutting of PVC, aluminum and wooden profiles in desired angles. The operator has the possibility to adjust the cutting speed of the saw blade via knob according to material type and size.

➢ Cutting at fixed angles of 15 -22.5 -30 -45 -90 , and at intermediate angles via fixing arm. Machine has been designed according to UL, CSA and CE Safety Directives.

➢ The movable back fence enables straight and angle cutting of broad profiles.
➢ The cutting speed can be adjusted manually according to material type.
➢ If the protection cover is opened during the cutting operation, the saw blade moves down to its starting point automatically due to safety reasons.
➢ After the cutting operation is finished, the saw blade moves down automatically from the top rising point.

Please include the below mentioned data in all your correspondence regarding the machine with the manufacturer and/or your ATECH dealer.

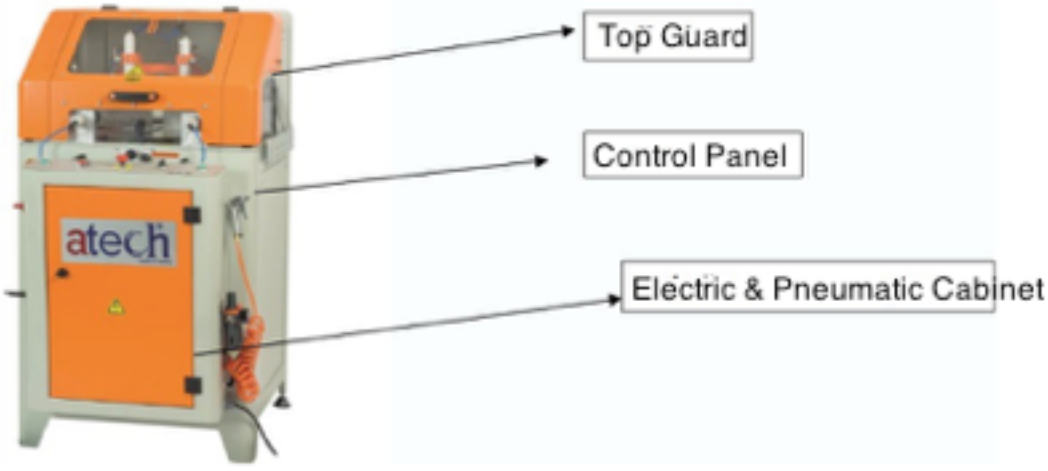
*Machine model
*Machine's serial number
*Voltage and frequency
*Name of dealer where machine was purchased
*Date of purchase
*Description of the machine fault
*Average daily operation period

STANDARD ACCESSORIES

- Ø450 mm (18") saw blade
- Air gun
- Twin pneumatic horizontal and vertical clamps
- Chip collector connectors
- User's manual

OPTIONAL ACCESSORIES

- Pneumatic spray mist lubrication system
- Infeed/outfeed tables
- Chip collector (Vacuum)
- Extra saw blade



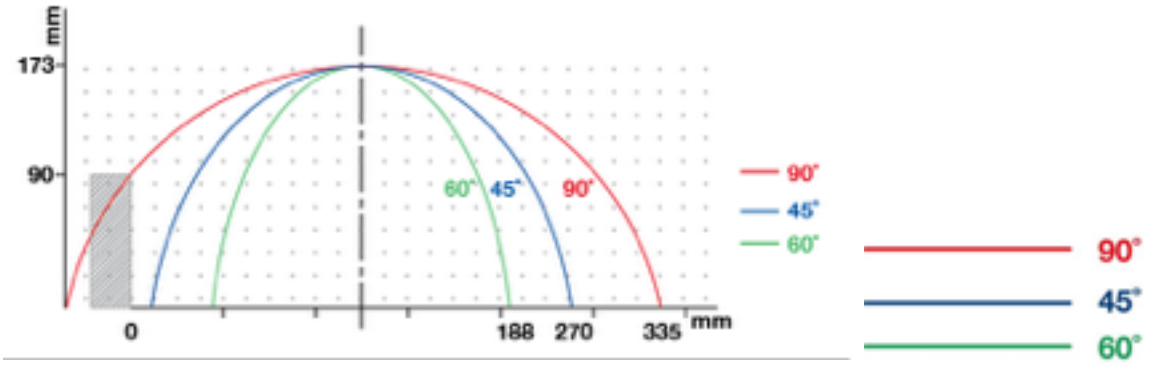
..! For the operator's safety the machine will not start to work unless the top guard is closed.

2.2. TECHNICAL FEATURES

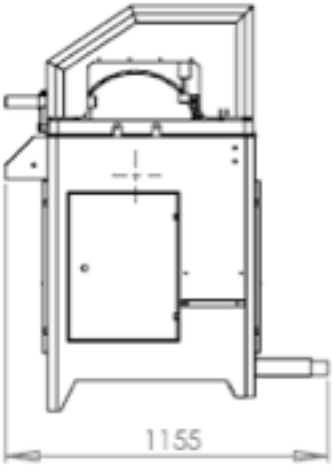
Teknik Özellikleri Technical Features الميزات التقنية						
Crater A-450	2.2 kW, 3 HP 400 V, 50 Hz	D=450 mm d=30-32 mm	3000 r.p.m.	BAR AIR CONS. 8 Bar 50 lt/min	W WxLxH 90x95x145	kg 225

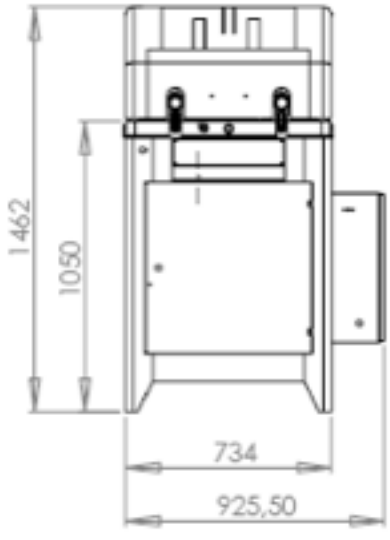
Noise Level :76 dB

2.3. CUTTING DIAGRAM

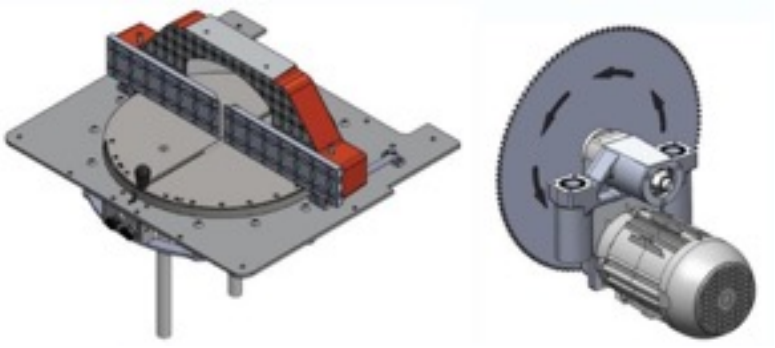


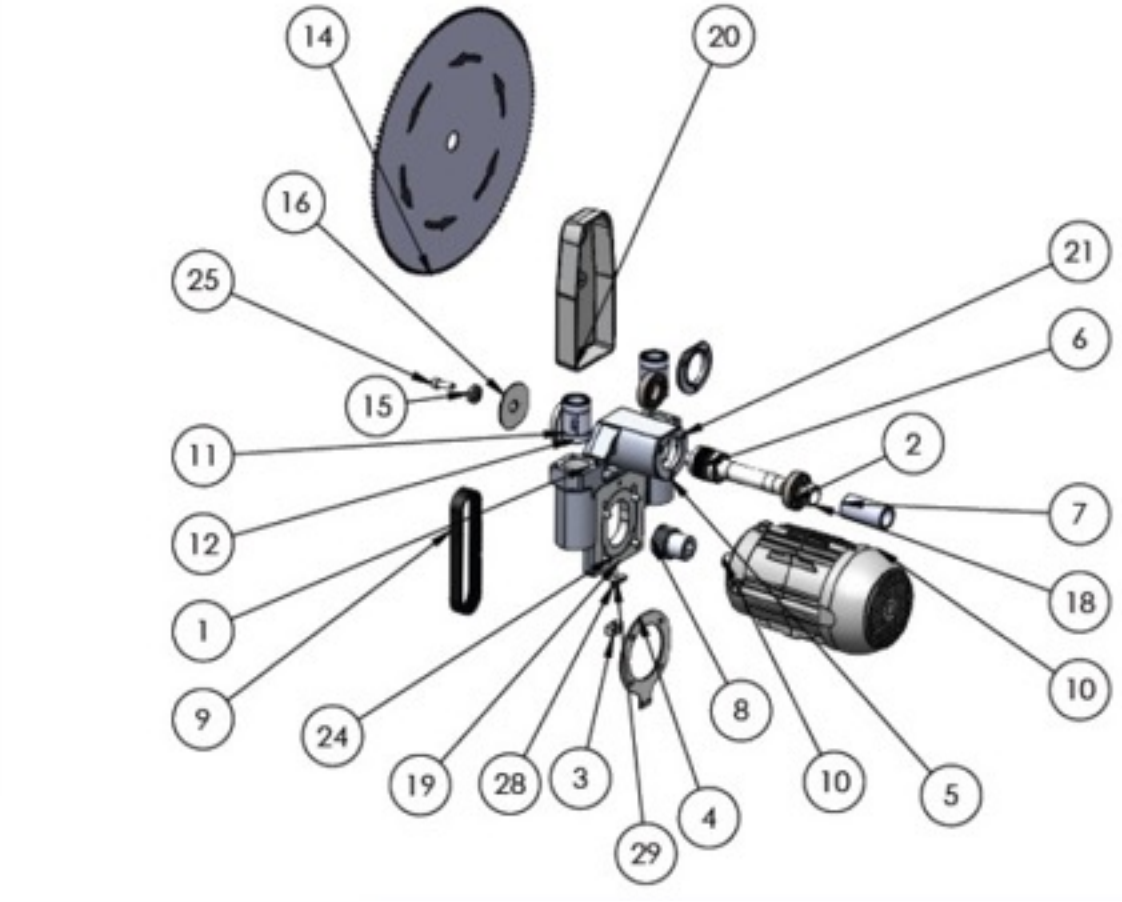
2.4. OVERALL DIMENSIONS



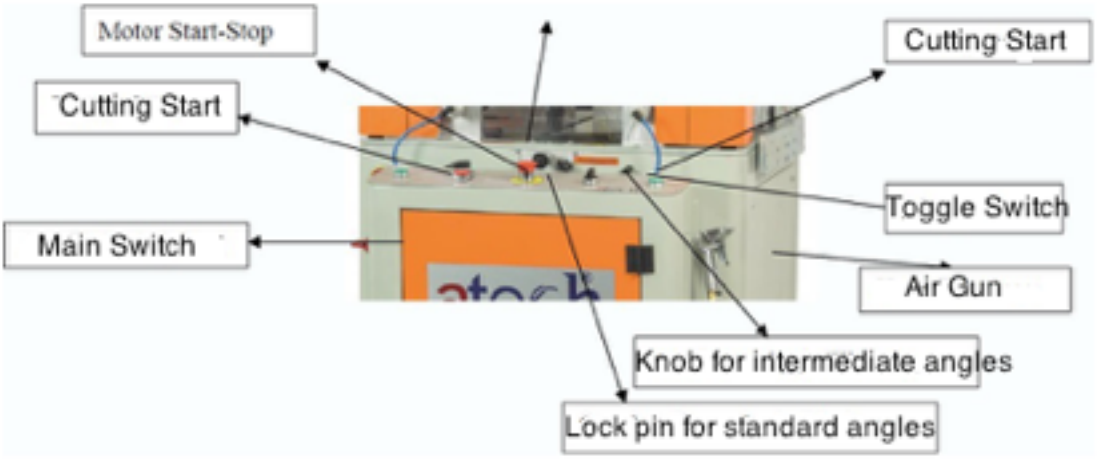


2.5. PARTS LISTS and TECHNICAL DRAWINGS





ÖĞE NO.	PARÇA NUMARASI	TANIM	MİKT.
1	CR-450_AHTAPOT		1
2	6206_ZZ_RULMAN		2
3	CR-450_MOTOR_GERGİ_KÜTÜĞÜ		1
4	CR-450_MOTOR_GERGİ_SACI		1
5	CR-450_RULMAN_KAPAĞI		2
6	CR-450_TESTERE_MİLİ		1
7	CR-450_TESTERE_MİLİ_BORUSU		1
8	PJ_KAYİŞ_MOTOR_KASNAĞİ(Ø52x56 x10ÖKNL)		1
9	PJ-483_KAYİŞ_10-KANAL		1
10	MOTOR_2.2KW_B14_3000RPM		1
11	LME-30-UU		4
12	TESTERE KAPLINI		1
13	RONDELA 30-32 mm		1
14	TETERE 450		1
15	ARKA ÇATAL ÖZEL PULU		1
16	CR-450_TESTERE_FLANŞI		1
17	CR-450_MOTOR_KASNAK_PULU		1
18	CR-450_TESTERE_MİLİ_SOMUNU		1
19	CR-450_MOTOR_GERGİ_CİVATASI_BASMA_PULU		1
20	CR-450_TESTERE_MUHAFAZA		1
21	A_H.B_M6x20		6
22	A_H.B_M8x20		1
23	İNBUS_M6x50		1
24	İNBUS_M8x35		4
25	İNBUS_M10x30		1
26	SETUSKUR_M4x2.5		2
27	DAR_DÜZ_PUL_M8		4
28	A.A_M6x40		1
29	İNBUS_M6x16		2
30	SOMUN_M6		1



2.6. ELECTRIC and PNEUMATIC CONTROL PANEL

The electric and pneumatic control panel gives you access to make adjustments regarding the air pressure.

The panel door has to definitely closed and locked during cutting operation. When work is to be done for maintenance and repair;

UNPLUG THE MACHINE AND DISCONNECT THE AIR SUPPLY.

The air pressure safety switch installed on the panel disengages all pneumatic components for safety reasons, when the air pressure drops below 4 Bar (60 psi). When the air pressure drops below 4 Bar (60 psi) the saw blade and pneumatic clamps do not work for safety.

3. SAFETY

3.1. SAFETY INFORMATION

The symbols shown hereunder are necessary to be read with special attention. Not reading or observing of them may cause damage to the equipment or personal injury.

IMPORTANT

The **IMPORTANT** symbol above is one telling to apply special care and to be careful at carrying out the specified operation.

CAUTION !

The **CAUTION!** Symbol above warns you against specific dangers, and requires to read the text. Not observing may cause damage to the equipment.

DANGER WARNING

The above symbol **DANGER WARNING**, warns you against specific dangers, and you have definitely to read them. Negligence may cause damage to the equipment and bodily injury.

Read the user's manual carefully before using the machine or carrying out maintenance works.

3.2 Accidents Prevention

1. Our machines are manufactured in accordance with CE, UL and CSA safety directives, which cover national and international safety directives.

2. It is the task of the employer to warn his staff against accident risks, to train them on prevention of accidents, to provide for necessary safety equipment and devices for the operator's safety.

3. It is the task of the employer to warn his staff against accident risks, to train them on prevention of accidents, to provide for necessary safety equipment and devices for the operator's safety.

4. Machine should be operated only by staff members, who have read and understood the contents of this manual.

5. All directives, recommendations and general safety rules contained in this manual have to be observed fully. The machine cannot be operated in any way for purposes other than those described herein. Otherwise, the manufacturer shall not be deemed responsible for any damages or injuries. And such circumstances would lead to the termination of the warranty

2. General Safety Information

1. The power cable should be led in such a way that nobody can step on it or nothing can be placed on it. Special care has to be taken regarding the inlet and outlet sockets

2. Don't overload machines for drilling and cutting. Your machine will operate more safely with power supply in accordance with the stipulated values.

3. Use correct illumination for the safety of the operator. (ISO 8995-89 Standard The lighting of indoor work system)

4. Use correct illumination for the safety of the operator. (ISO 8995-89 Standard The lighting of indoor work system)

5. Don't use any materials other than those recommended by the manufacturer for cutting operations on the machine.

6. Ensure that the work piece is clamped appropriately by the machine's clamp or vice

7. Ensure safe working position, always keep your balance.

8. Keep your machine always clean for safe operation. Follow the instructions at maintenance and replacement of accessories. Check the plug and cable regularly. If damaged, let it replace by a qualified electrician. Keep handles and grips free of any oil and grease.

9. Unplug first, before conducting and maintenance works.

10. Ensure that any keys or adjustment tools have been removed before operating the machine..

11. If you are required to operate the machine outside, use only appropriate extension cables.

12. Repairs should be carried out by qualified technicians only. Otherwise, accidents may occur.

13. Before starting a new operation, check the appropriate function of protective devices and tools, ensure that they work properly. All conditions have to be fulfilled in order to ensure proper operation of your machine. Damaged protective parts and equipment have to be replaced or repaired properly (by the manufacturer or dealer).

14. Don't use machines with improper functioning buttons and switches

15. Don't keep flammable, combustive liquids and materials next to the machine and electric connections.

3.2 Safety Symbols and Their Meanings

	Read the user guide		Ensure safe working position, always keep your balance.
	Wear ear protectors		Elektrical excitation
	Wear safety goggles		Don't place your hands between parts in motion..
	If the power cable should be damaged during operation, don't touch it and unplug it. Never use damaged power cables.		High temperature warning

	During saw blade change operations, use protective gloves		Keep your fingers clear of the movable parts of the glide arm.
	The above symbol **DANGER WARNING**, warns you against specific dangers, and you have definitely to read them..		The **IMPORTANT** symbol above is one telling to apply special care and to be careful at carrying out the specified operation

4. SAFE TRANSPORT OF THE MACHINE

1.The transport should be done by qualified personnel only.

2.The machine should be transported by lifting with proper equipment (not touching the ground during the transport).

3. Unless customer requests the contrary, the machine will be delivered in wooden crate.
4. Movable parts on the machine should be fixed before carrying out the transport.
5. The machine dimensions and weight are stipulated in the technical specification sheet.

5. INSTALLATION OF THE MACHINE

1.Preparation

1. The ground, where the machine will be placed, should be even, solid enough to bear the weight of the machine
2. The machine should be located approx. 100 cm (40”) away from the rear wall
3. You can provide the balance of the machine with adjustable counterforts in the bottom part.
4. Attach the MKN 300 conveyor, if purchased, to the saw on the right side surface of the machine by using the screws on the machine. Provide the conveyor bobbins and machine top surface to be the same parallelism by using a sensitive and calibrated water gauge.
5. Side protective covers are sent in dismantled form. Mount the covers.
6. To use chip collection manifolds, the absorption flow rate of air for dry chips has to be considered to be min.20m/sec. , and 28 m/sec absorption flow rate of air wet chips (>=%18 humidity) can be decided to operate the manifolds

2. Connecting to Power Source

1. The Electrical connection must be made by a licensed electrician
2. The power outlet socket on the machine should be available.

3. Plug the machine to a grounded socket.

4. Main voltage of the machine is 3-Phase 220V or 440V 60 Hz.

5.Check the power source voltage. It has to be in accordance with the values stipulated on the machine's type label.

6. After electrical connection is made, machine must be operated in idle running and check whether the saw blade rotates in correct direction. If the rotation direction is wrong, correct the power connection by switching 2 phases.

6. MACHINE SAFETY INFORMATION

1. Lifting, installation, electric maintenance of the machine should be carried out by qualified personnel only.

2. Routine maintenance and scheduled maintenance should be carried out by qualified personnel after unplugging the machine first.

3. Ensure that the machine has been cleaned, tested and maintained before starting to operate it.

4. Check the safety devices, power cable and moving parts regularly. Don't operate the machine before having replaced defective safety devices or faulty parts.

5. Never replace the saw blade before unplugging first.

6. Keep foreign materials away from the working area of the machine, keep away from the machine's moving parts

7. Do not work on the machine by removing the protective parts

The safety data have been defined above. In order to prevent physical damage or damage to the equipment, please read the safety information carefully and keep the manual always in an easy accessible place.

7. OPERATION

1. Preparation

1. Degrease and dry the machine table. Especially ensure that the holding grips and handles are clean and dry.

2. Clean all surfaces of the machine from chip and foreign particles. Use eye glasses for protection.

3. This upcut miter saw is capable of cutting rigid plastic and non-ferrous metals like aluminum, as well as wood.

4. Check whether the cutting tool (saw blade) is installed safely.

5. Check cutting tools against corrosion, distortion and fractions. If cutting tools are damaged, replace them.

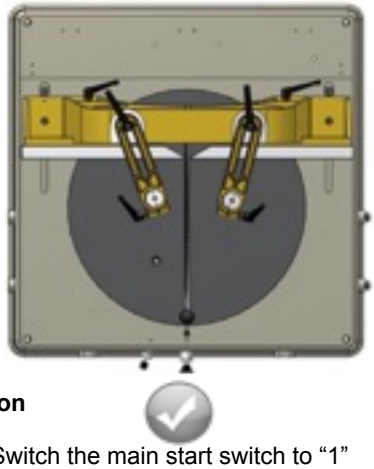
6. Cutting tool must process on the part after machine is operated and cycled.

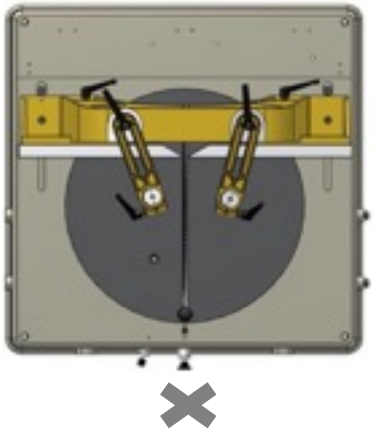
7. Definitely check and make sure the direction of rotation of the saw blade is correct.

8. **Do not start cutting before clamping the work piece properly.**

9. Adjust the reducer speed adjustment screw by rotating in the direction of clockwise until providing the desired progress if the saw group cutting progress is fast. Make the opposite of the above action if the saw group cutting progress is slow.

10. When cutting, ensure that the clamp pistons and brackets are out of the rising area of the saw blade.





2. Operation

1. Switch the main start switch to “1”

2. Open the top guard. The top guard operates manually.

3. It is possible to make a straight or miter cuts on this saw. 0-15 - 22.5 - 30 – 45 - 60 and 75 degrees can be set via positive pin locks, while intermediate angles are set by tightening a screw at the respective angle position.

4. In order to make a miter cut, pull the table locking pin, which will release the turn table. At the same time, hold the grip on the table and turn it to the desired cutting angle. The angles are marked precisely via CNC machining center onto the rotating table.

5. In order to provide the right or left movement of the movable set square (back fence) loosen the fixing pipe by turning half-round. Towards the right or left direction of the movable set square after completing the movement, provide the parallelism of the movable set square against each other in both of the set squares with the help of the setscrews on the fixed set square. After finishing all of the settings fix the set squares by tightening the fixing pipes.

Distance between set screws cannot be less than table channel's dimension. (Dimension of TABLE CHANNEL is 8 mm.)

6. If the profile to be cut is wide or high, loosen the M8 bolts on the square and move them until you reach the backstop pins. Limit of backwards movement is 100 mm. Look at the cutting diagram for the maximum measurements and positions of the materials to be cut. Fix the square to the table by tightening the M8 bolts.

7. Place the PVC or aluminum profile that you will work with on the tray. Using the toggle switch located on the control Panel clamp the material with the clamps located on the set square.

8. The clamps operate pneumatically at the Crater models. You can adjust the back and forth and up and down position of the clamps with special clamping parts. The clamps are controlled via toggle switch on the control panel.

9. Close the top guard. Due to safety reasons, cutting operation will not start unless the top guard is closed.

10. Start the saw blade rotation by pressing the Motor Start button on the control panel.

11. The saw blade will start to rise when the 2 green buttons on the control panel are pressed simultaneously. Once these buttons are depressed the saw blade moves down to its starting position.

12. Once the cut is finished, release the green cutting start buttons. Saw blade will move back down.

13. The optional pneumatic spray mist lubrication system can be used with this machine. In particular, when cutting aluminum it is highly recommended to use this system, which sprays coolant onto the saw blade during the cutting operation. You can adjust the flow rate of the coolant by using the injection valve.

14. Open the top guard

15. Take the cut piece out after releasing the clamps via the toggle switch.

16 Use the motor stop button to stop the saw rotation.

NOTE: Release the pressure on the cutting buttons in a possible hazard, or press the emergency stop button.

17. Switch the main switch to “0” (FIGURE 1 NO.17-3)
18.

8. MAINTENANCE, SERVICE AND REPAIR

1. Maintenance

1. Cut the electric and pneumatic power connections off.
2. Clean all surfaces of the machine from burr, chips and foreign substances. If the machine will not be used for a long time, lubricate unpainted parts with oil to prevents rusting.
3. When cleaning the machine, do not use materials that may damage the paint.
4. Check the saw blade for corrosion, distortion and fractions. Replace the saw blade if it is damaged.
5. Before using a new saw blade on the machine, run it idle first to see whether the saw blade has been installed correctly and rotates in the correct direction. Use proper saw blades in accordance with the purpose of this saw.
6. If the saw teeth are blunt, have it resharpened or install a new saw blade.
7. Sharpen with proper sharpening machines by taking the angular value of the saw into consideration.

2. Changing the saw blade

1. First, disconnect power supply to the machine.
2. Open the saw blade housing cover.

NOTE : Make sure not to damage the components inside the cabinet.

3. Remove the cover of the housing by removing the four butterfly nuts located on the saw protective enclosure.
4. Remove the M10 screw with the help of an 8 mm Allen wrench. When removing the bolt counter-hold the saw blade shaft from the other end with a 19 mm wrench.
5. Remove the string and saw coupling respectively.
6. Take out the saw blade carefully.
7. Install the new saw blade onto the shaft ensuring the correct rotation direction.
8. Install the guard group parts applying the reverse order as described above.
9. It is necessary to sharpen / replace the saw blade in certain intervals depending on the cutting material. If the cut material leaves burr after the cutting operation or if the saw blade is strained, it needs to be sharpened / replaced.
10. When replacing the saw blade, use the part of the blade washer which is appropriate for the blade shaft diameter. The outer diameter of the blade washer is 30 and 32 mm.

11. During saw blade change operations, use protective gloves.

12. Saw blade must be selected according to DIN EN 847-1.

13. A saw blade rotating in reverse direction, causes danger both for the operator and the equipment. The teeth of the saw blade would be damaged and even broken.

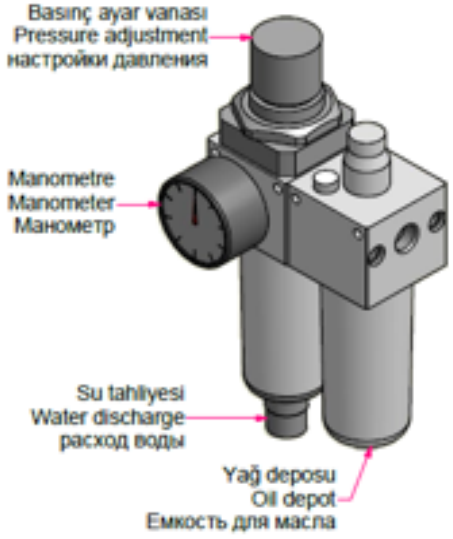
3. Changing the belt

1. Cut the electric connection of the machine.
2. Dismantle the saw blade by applying the saw replacement process (Clause 8.2).
3. After taking the saw blade out, put it somewhere inside the machine base or take it out by removing saw blade housing connection screws.
4. Take out the connection screws of the belt housing by removing them.
5. Loosen the motor connection bolts with the wrench.
6. Provide the slackening of the belt by pushing the Motor upwards.
7. Replace the belt with the new one. Be careful when fixing the belt to the channels of balancing wheel of the channels of the belt.
8. After placing the new belt in its seat, arrange tensioning of the belt by turning belt tensioning part with the help of 8 mm Allen wrench. After you set to the appropriate tension, tighten the motor connection bolts with your unused hand without leaving the part.
9. Fix the removed parts by following the reverse sequence that your removed them before.

4. Angular and run out adjustment control of saw blade and set sguare

1. Cut the electric connection of the machine.
2. Control the run out of the saw blade via naked eye. İf possible use a dial gage.
3. If there is any problem in the inclined cut, control the saw's 90 degrees orthogonal to the set square with the aid of the set-square. If it is not proper, loosen the stay bolt at the top which tightens the spring. Have the pin located to its place by turning the spring in way that it can provide it to be proper by setting it to the 90 degrees. Tighten the screw at the top again which fastens the spring.

5. **Adjust the air pressure (pneumatic systems)**



1. Pull up pressure adjustment valve. Set adjustment valve to the desired value on manometer by turning it clockwise or counter clockwise. Then lock the valve by pressing it down.

2. Set the air pressure between 6 and 8 BAR (90-120 psi). If air pressure drops below the stated values, accessories operating with pneumatic power do not work.

3. Conditioner unit accumulates the water in the air in the collection container so that it won't damage pneumatic components. At the end of the working day, empty the accumulated water by opening water discharge valve under the collection container.

4. In order to put oil to the oil tank, remove the reservoir by turning. Oils recommended by the manufacturer are; TELLUS C10 / BP ENERGOL HLP 10 / MOBIL DTE LIGHT / PETROL OFİSİ SPINDURA 10.

10. TROUBLESHOOTING GUIDE

Here are some recommendations for solving urgent problems. If the trouble cannot be solved, or if you have a problem other than those described hereunder, please contact our technical service or your nearest dealer.

TROUBLE	CAUSES	REMEDY
Low surface quality (at aluminum and similar materials) : Rough surface, Large chip, Not homogenous surface, Saw blade traces visible	Not cooling the saw blade surfaces	Lubricating the saw blade cutting surfaces, Using of cooling liquid
	Using of damaged or blunt saw blade	Check the saw blade teeth. Replace if necessary.
	Saw blade moves to quick	The cutting speed is too high for the material. Decrease the cutting speed.
Motor does not work (Start button is pressed, not working)	No power supply to the machine.	Check the electric cable connections. Check the electric power sockets.

Motor is working but the pneumatic clamp pistons do not work.	The air supply connections are missing, or the air pressure is too low.	Check the air compressor connections. Adjust the air pressure between 6-8 Bar on the conditioner.
The saw blade rotates in reverse direction.	The electric connection, the power cable or the connection at the panel is wrong.	Let the electric connections carry out by a qualified electrician.